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weight to the arguments already adduced to this effect. But the change from the fauna of the underlying cretaceous numbers four and five is very striking, the genera and often higher groups being quite different. The types of the marine beds were found to be *Pythonomorpha*, *Elasmosaurus*, *Plesiosaurus*, *Enchodus*, chimærids and sharks, with marine *Cephalopoda*, etc. Nevertheless the physical transition between the marine and lacustrine formations appears to be complete, as indicated by Professor Hayden.

POWELL'S GEOLOGY OF THE UINTA MOUNTAINS.¹ The field work reported on by this important volume was done between the years 1868 and 1875, among the Uinta Mountains and adjacent regions, covering portions of Wyoming south of the Pacific Railroad and of Utah. This region is of great general geological interest, and its geology has been discussed by Major Powell in an able and original way. Particular attention has been paid to facts relating to mountain-building, the amount of denudation and displacement of strata in these mountains being fully discussed and graphically represented. The Bird's-Eye View of a Part of the Uinta Uplift, in the atlas, well illustrates the author's manner of representing the orography of an extensive plateau area. The formations described have an aggregate thickness of fifty thousand feet, and embrace groups of palæozoic, mesozoic, and cenozoic age. The palæontology has been elaborated by Dr. C. A. White. The geological maps and sections are of a high degree of interest and of much practical importance.

GEOGRAPHY AND EXPLORATION.

RETURN OF THE BRITISH ARCTIC EXPEDITION.—The following note is condensed from the newspaper reports. The British Arctic Expedition under Captain Nares returned to England, October 27th. The Alert and Discovery left Fort Foulke on July 29, 1875, and entered the ice off Cape Sable. After a severe and continuous struggle they reached the north side of Lady Franklin Bay, where the Discovery was left in winter quarters. The Alert pushed on and reached the limit of navigation on the shore of the Polar Sea. The ice varied in thickness, being in some places one hundred and fifty feet thick. President Land does not exist.

The Alert wintered in latitude $82^{\circ} 27'$. At this point the sun was invisible one hundred and forty-two days, and a temperature the lowest ever recorded was experienced, being fifty-nine degrees below zero for a fortnight, and falling once to one hundred and four degrees below the freezing point. A detachment with sledges was dispatched northward. It was absent seventy days, and reached latitude $83^{\circ} 20'$. Another party rounded Cape Columbia, the northwest point of America, and traced two hundred and twenty miles westward from Greenland, and also explored far to the eastward.

¹ Report on the Geology of the Eastern Portion of the Uinta Mountains and a Region of Country adjacent thereto. With Atlas. By J. W. Powell. Washington. 1876. 4to, pp. 218.

During the sledge journeys the ice was so ragged that it was only possible to advance a mile a day.

During the winter rich collections in natural history were made and many valuable scientific observations were taken. Excellent coal was found near the place where the Discovery wintered.

A member of the expedition telegraphs to the *Daily News* that the northernmost land reached was in latitude $83^{\circ} 07'$. After that there was ice. The point farthest west reached was in longitude 85° . Lady Franklin's Straits are really a bay. Petermann Fiord was closed by a glacier. The northernmost point of Greenland seen was in latitude $82^{\circ} 57'$.

THE NEW ROUTE TO CHINA.—The following details are given in the daily papers of the remarkable discovery of Professor Nordenskiöld, the Swedish explorer, already reported by telegraph:—

“He reports having encountered no obstacles, and considers the way now quite open from Europe to China *via* the northern passage and the valley of the Yenisei River, by which steam communication is obtained across Siberia and almost to the frontiers of China. An immense unmeasured area of extremely fertile and valuable soil was found in this region, all of which is accessible for immediate cultivation.

“The commercial value and the important results to flow from this demonstration of the feasibility of a northeastern passage to Siberia and China can hardly be foreseen or overestimated. Nordenskiöld, whose letter is unfortunately brief, writes that he has also obtained results of great interest to science. Dredging and scientific observations were constantly carried on during the entire voyage. Large accessions have been made to the previously obtained collections from this heretofore unknown region. One of the unexpectedly favorable phenomena of the passage, the professor reports, was that the water was uniformly found to be surprisingly warm.”

MICROSCOPY.¹

VAN DER WEYDE'S OBLIQUE ILLUMINATOR.—At the Indianapolis meeting of the American Association for the Advancement of Science, in August, 1871, P. H. Van der Weyde, of New York, described a contrivance, believed to be new, for oblique illumination of transparent objects. It was designed chiefly to facilitate the resolution of lined or dotted objects, and consisted of a plane mirror lying beneath the object-slide and parallel to it, from which mirror light, condensed upon it from above by means of a bull's-eye condenser would be reflected back at the same angle through the object and into the objective. These illuminators were shown in successful operation at the meeting, working best with moderately high powers, and were freely distributed among the members present. They were briefly described in the *NATURALIST* for

¹ Conducted by DR. R. H. WARD, Troy, N. Y.